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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/552,370	04/19/2000	Patrice Y Simard	M61.12-0224	3084

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EXAMINER

DASTOURI, MEHRDAD

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 08/20/2004

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/552,370

Applicant(s)

SIMARD ET AL.

Examiner

Mehrdad Dastouri

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-18,20-27 and 29-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-11,13-18,20-27 and 29-38 is/are rejected.
- 7) ☒ Claim(s) 12 and 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 1, 2004 has been entered.

Response to Amendment

2. Applicants' amendment filed April 30, 2004, has been entered and made of record.

3. Applicants' arguments have been fully considered but they are not persuasive.

Regarding Claim 1-6, Applicants argue in essence that prior art of record (Saund) do not disclose the feature of sensing successive linear array portions (e.g., scanning) of a first image and a second image as recited in Claim 1.

The Examiner disagrees and indicates a digital image capturing devices (digital cameras, scanners, etc.) inherently sense successive linear array portions of the image areas using their CCDs, because a digital image is a matrix of pixels (picture elements) arranged in successive rows (linear array portions). Furthermore, sensing successive linear array portions of images is a well-known process commonly performed by scanners as admitted in Page 9, Lines 13-22 of the instant application's specification. It is further submitted that claim language does not recite separate whiteboards, and

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based on a reasonable interpretation of the broad claim language, Tiles 62, 64, 66, etc., depicted in Figure 3, are separate writing surfaces spaced apart from each other (e.g., Tiles 62 and 66).

Applicants' further arguments are moot in view of new grounds of rejection.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Saund (U.S. 5,528,290).

As per Claim 1, Saund teaches:

an image capturing system comprising:

a visual sensor providing image data corresponding to sensed images (Figure 1, Electronic Camera 54; Column 3, Lines 12-15), the visual sensor selectively directed toward a first writing surface to sense successive linear array portions of a first image (Figure 3, Tiles 62, 64, 66, etc. Each tile is a separate writing surface. Claim language broadly recites sensing successive linear array portions of a first image. Capturing digital images will result in obtaining a matrix of pixels (picture elements) which arranged in successive rows or linear array portions.) and toward a second area spaced apart from the first writing surface to sense successive linear array portions of a second image (Figure 3, Tiles 62, 64, 66, etc. Each tile is a separate writing surface.); and

an image processor coupled to the visual sensor to receive the image data from the visual sensor (Figure 1, Computer 56 is connected to Electronic Camera 56 via the network 58), the image processor adapted to process the image data as a function of processing values, wherein the processing values are a function of direction of the visual sensor toward first writing surface and the second area (Figures 5-8; Column 4, Lines 10-42; Column 6, Lines 22-67, Column 7, Lines 1-32. Processing values are obtained from image data by applying a gradient operator to the raw image to identify landmarks, and afterwards projecting landmarks in camera coordinates.).

As per Claim 2, Saund teaches:

a storage device for storing the processing values (Computer Memory, Column 3, Lines 14-15) comprising a first processing value and second processing value, wherein the image processor processes the image data the first position using the first processing value, and wherein the image processor processes the image data of the second position using the second processing value (Figure 5, Steps 130 and 132; Column 4, Lines 60-67, Column 5, Lines 1-30).

As per Claim 4, Saund teaches:

wherein the first processing value relates to an optical correction for distortion the first image (Figure 2, Steps 102 and 106) and the second processing value relates to an optical correction for distortion of the second image (Figure 2, Step 108). Saund teaches that all tiles (different writing surface areas) are perspective corrected based upon a perspective distortion correction transformation that is calculated the first time and updated as the system is used (Column 5, Lines 54-60).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saund (U.S. 5,528,290) in view of Tatsumi et al., (hereinafter, Tatsumi), (U.S. 6,476,862).

Regarding Claim 3, Saund discloses zooming capability of Camera 54 (Column 3, Lines 16-21) but does not explicitly disclose the visual sensor includes a zoom lens, and wherein the first processing value relates first setting the zoom lens and the second processing value relates a second setting of the zoom lens.

Tatsumi discloses an image input device wherein the visual sensor includes a zoom lens (Figure 1, Element 1; Column 1, Lines 19-21), and wherein the first processing value relates first setting of the zoom lens and the second processing value relates a second setting of the zoom lens (Column 3, Lines 42-48; Column 7, Lines 65-67, Column 8, Lines 1-5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use the predetermined zoom settings of Tatsumi as inputs to the perspective transformation of Saund to reduce the need for further compensation by the transformation or to account for the additional distance that the subject matter being imaged is far from the camera.

8. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saund (U.S. 5,528,290) in view of Oliver (U.S. 6,330,082).

As per Claim 5, Saund teaches using a camera but provides no details with respect to the number of sensing elements.

Oliver teaches:

wherein the visual sensor comprises sensing device having plurality of sensing elements (Column 1, Lines 10-27; Column 5, Lines 6-13).

As per Claim 6, Oliver teaches

wherein the device comprises a linear array of sensing elements (Column 5, Lines 6-21).

9. Claims 7, 9, 10, 18, 20-27, 29-32, 34, 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saund (U.S. 5,528,290) in view of Hong et al., (hereinafter, Hong), (U.S. 5,764,799).

With regards to Claim 7, arguments analogous to those presented for Claim 1 are applicable to Claim 7. However, Saund does not disclose the image processor capable of identifying information provided on the writing surface and information provided on the second area, and storage device for storing reference visual images, wherein the image processor is coupled to the storage device to access the reference visual image identify information provided on writing surface and the second area.

Hong discloses a storage device for storing reference visual images (RAM, Column 4, Lines 11-20), wherein the image processor is coupled to the storage device to access the reference visual image identify information provided on writing surface

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and the second area (Column 4, Lines 11-20; Column 10, Lines 43-50. The information on different areas of the writing surface has been identified by OCR.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Saund's invention according to the teachings of Hong to implement further limitations recited in Claim 7, because it will increase the versatility of the image capturing system by providing recognition capability for the sensed images.

Regarding Claim 9, Hong discloses the image capturing system of Claim 7 wherein the visual sensor comprises a sensing device adapted to scan the writing surface and the second area (Image Digitizing device 301; Column 3, Lines 50-58).

With regards to Claim 10, arguments analogous to those presented for Claim 4 are applicable to Claim 10.

With regards to Claims 18 and 27, arguments analogous to those presented for Claim 7 are applicable to Claims 18 and 27.

Regarding Claim 20, Saund teaches:

wherein image capturing system includes visual sensor disposed above the writing surface (Figure 1, Element 54. The writing surface is on the wall and the visual sensor is located above the wall on the ceiling.).

Regarding Claim 21, Saund teaches:

wherein image capturing system includes visual sensor is mounted to a ceiling of the room (Figure 1, Element 54).

Regarding Claim 22, Saund teaches:

wherein the image capturing system includes visual sensor disposed within the room to sense images of the writing surface and second area spaced apart from the writing surface (Figure 1, Element 54).

Regarding Claim 23, Saund teaches:

wherein the visual sensor is mounted to a wall of the room (Figure 1, Element 54).

Regarding Claim 24, Saund teaches:

wherein the visual sensor is disposed above the writing surface (Figure 1, Element 54).

Regarding Claim 25, Saund teaches:

wherein image capturing system includes visual sensor is mounted to a ceiling of the room (Figure 1, Element 54).

With regards to Claim 26, arguments analogous to those presented for Claim 9 are applicable to Claim 26.

With regards to Claim 29, arguments analogous to those presented for Claim 4 are applicable to Claim 29.

With regards to Claims 30-32, 34, 36 and 37, arguments analogous to those presented for Claims 1 and 7 are applicable to Claims 30-32, 34, 36 and 37.

10. Claims 11 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saund (U.S. 5,528,290) further in view of Hong et al., (hereinafter, Hong), (U.S. 5,764,799) and Oliver (U.S. 6,330,082).

Neither Saund nor Hong explicitly disclose the image capturing system of Claim 7 wherein the image processor is adapted identify an area requiring reimaging.

Oliver teaches:

wherein the image processor is adapted identify an area requiring reimaging (Figure 10; Column 8, Lines 38-43).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Saund's and Hong's combination according to the teachings of Oliver to adapt the image processor to identify an area requiring reimaging because it will increase the system accuracy and will enhance the quality of identified information.

With regards to Claim 38, arguments analogous t those presented for Claim 11 are applicable to Claim 38.

11. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al., (hereinafter, Shimizu), (U.S. 5,450,127) in view of Saund (U.S. 5,528,290).

With regards to Claim 13, Shimizu teaches:

an image capturing system comprising:

a visual sensor providing image data corresponding to sensed images from a writing surface (the blackboard, Column 1, Lines 101-3), the visual sensor comprising set of adjacent sensing elements being exposed collectively successive portions of the image (Figures 1 and 4; Column 3, Lines 34-38); and

a storage device for storing sensing element control values (Reference level (Step S20), Column 6, Lines 34-35, inherently stored in some form of memory to be considered a reference level), and

a controller coupled to the storage device and the visual sensor (Figure 3, Element 10), the controller controlling time duration of exposure of the sensing elements (Column 6, Lines 30-35) to each linear array portion of images as function of exposure to successive linear array portions (Figure 6, Column 6, Lines 50-60. A digital image is inherently a matrix of pixels (picture elements) arranged in successive rows or linear array portions.).

Shimizu does not explicitly disclose sensing images from a writing surface and a second area spaced apart from the writing surface.

Saund discloses a visual sensor providing image data from a first writing surface and a second area spaced apart from the writing surface (Figure 3, Tiles 62, 64, 66, etc. Each tile is a separate area spaced apart from an adjacent tile that is considered a writing surface.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Shimizu's invention according to the teachings of Saund to sense images from a writing surface and a second area spaced apart from the writing surface because it will expand the versatility of the image capturing device by increasing the system flexibility to cover a plurality of different areas.

With regards to Claim 14, arguments analogous to those presented for Claim 1 are applicable to Claim 14.

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12. Claims 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al., (hereinafter, Shimizu), (U.S. 5,450,127) further in view of Saund (U.S. 5,528,290) and Hong et al., (hereinafter, Hong), (U.S. 5,764,799).

With regards to Claims 15 and 16, arguments analogous to those presented for Claim 7 are applicable to Claims 15 and 16.

With regards to Claim 17, arguments analogous to those presented for Claim 4 are applicable to Claim 17.

13. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saund (U.S. 5,528,290) further in view of Hong et al., (hereinafter, Hong), (U.S. 5,764,799) and Inagaki (U.S. 5,999,214).

As per Claim 33, neither Saund nor Hong discloses sensing a visual image includes initiating sensing of a visual image with a switch movable to relative to the second location.

However, Inagaki teaches:

Wherein sensing a visual image includes initiating sensing of a visual image with a switch movable to relative to the second location (Column 12, Lines 4-25, remote switch responsive to voice or manual input.).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Saund's and Hong's invention according to the teachings of Inagaki to initiate sensing of a visual image with a switch movable to relative to the second location because it is a conventional method routinely implemented for selecting additional locations.

As per Claim 35, arguments analogous to those presented for Claim 33 are applicable to Claim 35.

Allowable Subject Matter

14. Claims 12 and 39 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 of the instant invention recites the image capturing system of Claim 11 wherein the image processor controls the visual sensor to obtain at least one second visual image corresponding to at least one portion of the writing surface or the second area, if reimaging is required, and wherein the processor is adapted to combine the first-mentioned visual images with the at least one second visual image.

Claim 39 recites the methodology corresponding to Claim 12, and is therefore is allowable.

Contact Information

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mehrdad Dastouri whose telephone number is (703) 305-2438. The examiner can normally be reached on Monday to Friday from 8:00 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mehrdad Dastouri
Primary Examiner
Group Art Unit 2623
August 20, 2004

MEHRDAD DASTOURI
PRIMARY EXAMINER

Mehrdad Dastouri